XXXII. *Catalogue of North Polar Distances of Eighty-four principal fixed Stars, deduced from Observations made with the Mural Circle at the Royal Observatory.* By John Pond, *Esq. Astronomer Royal, F. R. S.*

Read July 8, 1813.

The Catalogue, which I have the honour to transmit to the Society, is deduced from the whole of the observations made with the mural circle, from its first erection in June, 1812, to the present time. I am still employed in endeavouring to give it a greater degree of precision, and when it is entirely finished, I propose to submit some of the observations themselves to the Society, and explain the method by which the results have been obtained.

I have already mentioned, that I use neither level nor plumb-line; but determine the position of the instrument by means of a standard catalogue of stars derived from the instrument itself, in such a manner, that every series of observation of these stars, serves the double purpose of ascertaining the position of the instrument, and at the same time improving the Catalogue.

As the present Catalogue has been formed by frequently changing the position of the telescope on the circle, for the purpose of correcting every possible error of division, my observations have not been calculated to decide the question of parallax which has been suspected to exist in α Lyræ, α

Aquilæ, and some other stars. But from this time forward, I propose to use the instrument in one position of the telescope, with the hope of ascertaining, if not the parallax of these stars, at least the limits, which it does not exceed.

Though the change of position in the telescope, by which all error of division is avoided, is one of the most beautiful properties of this instrument, yet so accurately is it divided, that I cannot perceive, with certainty, any effect produced by this change, for I have often found as great a discordance between two series of observations made on the same divisions, as when they are entirely changed by a new position of the telescope. What the error of division may amount to in any one position, I cannot exactly say; but, I think, when the six microscopes are used, it can never exceed half a second, and very rarely amounts to half that quantity.

That some opinion may be formed of the accuracy of this instrument, I have subjoined to the Catalogue the results of the observations of some of the standard stars, whose places I am anxious to determine with the greatest precision, since I propose in future to determine all north polar distances by comparison with these stars; precisely in the same manner as right ascensions are now determined by comparison with the thirty-six stars, whose places have been so accurately determined by Dr. Maskelyne.

GENERAL CATALOGUE.

Names of Stars.	No. of Obs.	N. P. Distances Jan. 1, 1813.
		° ′ ″
1 γ PEGASI	25	75 51 21,0
2 α CASSIOP.	42	34 29 22,7
3 γ Cassiop.	8	30 17 53,0
4 POLARIS	200	1 41 21,75
5 δ Cassiop.	14	30 44 26,8
6 α ARIETIS	50	67 25 36,5
7 α CETI	18	86 39 0,75
8 α PERSEI	44	40 48 52,7
9 δ Persei	10	42 49 16,4
10 η Tauri	10	66 28 55,5
11 γ Eridani	9	104 2 51,2
12 γ Tauri	10	74 49 59,8
13 1 δ	9	72 54 18,3
14 2 δ	10	72 59 53,8
15 ε	10	71 14 39,2
16 ALDEBARAN	56	73 52 35,4
17 CAPELLA	80	44 12 20,5
18 RIGEL	30	98 25 33,8
19 β TAURI	50	61 33 43,6
20 γ Orionis	8	83 49 48,3
21 δ	18	90 26 48,6
22 ε	14	91 19 48,5
23 ζ	16	92 3 1,8
24 α ORIONIS	50	82 38 15,7
25 γ Geminorum	12	73 27 5,8
26 ε	11	64 41 41,4
27 SIRIUS	34	106 28 0,7
28 δ Geminorum	11	67 41 1,9
29 η Canis Major	6	118 56 42,7
30 CASTOR	30	57 42 46,7

Names of Stars.	No. of Obs.	N. P. Distances begin. 1813.
31 PROCYON	40	84 18 14,4
32 POLLUX	40	61 31 56,3
33 α HYDRÆ	10	97 51 11,3
34 ε Leonis	4	65 22 11,3
35 REGULUS	62	77 7 22,7
36 ζ Leonis	4	65 39 17,3
37 γ	4	69 12 59,7
38 α URS. MAJ.	60	27 14 31,5
39 δ Leonis	3	68 27 11,3
40 β LEONIS	24	74 22 57,7
41 γ URS. MAJ.	48	35 15 55,3
42 δ Urs. Maj.	13	31 55 38,2
43 κ Draconis	3	19 10 45,3
44 δ Virginis	3	85 34 58,6
45 α SPICA. VIRG.	20	100 10 51,3
46 η URS. MAJ.	80	39 44 57,9
47 α Draconis	12	24 43 38,2
48 ARCTURUS	80	69 50 19,1
49 θ Bootes	6	37 16 49,7
50 π	7	72 46 25,8
51 ε	12	62 7 52,4
52 1 } α LIBRÆ	15	105 15 22,7
53 2 }	4	105 12 38,7
54 β URS. MIN.	90	15 4 49,0
55 β Libra	8	98 41 3,4
56 α COR. BOR.	90	62 38 55,4
57 α SERPENTIS	70	82 38 39,3
58 δ Scorpii	9	112 4 41,4
59 1 β	8	109 16 55,7
60 2 β	7	109 16 43,6

Names of Stars.	No. of Obs.	N. P. Distances begin. 1813.		
		o	'	''
61 δ Ophiuchi	16	93	12	9,8
62 ANTARES	36	116	0	16,6
63 ζ Herculis	10	58	3	4,7
64 α HERCULIS	50	75	23	14,0
65 α OPHIUCHI	70	77	17	39,2
66 γ DRACONIS	90	38	29	3.7
67 α LYRÆ	100	51	23	0,5
68 ζ Aquilæ	13	76	24	19,0
69 δ Draconis	21	22	40	0,5
70 δ Aquilæ	10	87	14	53,4
71 γ Aquilæ	38	79	50	0,6
72 α AQUILÆ	100	81	36	58,7
73 β Aquilæ	12	84	3	4,1
74 1 α ⎫ CAPRICORNI	35	103	5	35,4
75 2 α ⎭	28	103	6	52.3
76 α Delphini	10	74	44	23.9
77 α CYGNI	80	45	22	56,9
78 α CEPHEI	40	28	12	12,5
79 β Aquarii	13	96	23	11,9
80 β CEPHEI	50	20	5	30,6
81 δ Capricorni	12	106	58	6,6
82 α AQUARII	20	91	13	21,6
83 α PEGASI	20	75	47	51,8
84 α ANDROMEDÆ	35	61	56	29,6

RESULTS OF OBSERVATIONS.

β *Ursæ Minoris.*

1812, June 12, 13, 14, 16, 17, 21, 22, 23, 28, 29 -	} 49,659	Mean of 10	49,659
June 30, July 6, 8, 9, 18, 20, 21, 22, 28, Aug. 7 -	} 48,926	Mean of 20	49,292
Aug. 13, 15, 17, 18, 19, Sept. 15, 16, 20, 21, Oct. 2 -	} 48,996	Mean of 30	49,194
Oct. 4, 18, 13, 19, 21, 25, 26, 28, 29 - -	} 48,617	Mean of 40	49,049
Oct. 31, Nov. 9, 14, 18, 21, 22, 23, Dec. 7, 8, 12 -	} 48,485	**Mean of 50**	48,937
Dec. 14. 1813 May 21, 26, 27, 28, 29, 31, June 1, 4, 7	} 48,951	Mean of 60	48,939
June 8, 11, 12, 16, 21, 22, 25, July 4, 5, 6, - -	} 49,695	Mean of 70	49,047
July 9, 12, 16, 17, 18, 20, 22, 24, 25, 26 - -	} 48,651	Mean of 80	48,998
July 28, 29, 30, Aug. 4, 7, 9, 12, 13, 16, 18 -	} 48,616	Mean of 90	48,955

This result is probably exact to within a quarter of a second. The discordances seem quite accidental, they neither arise from parallax, nor error of division, for the three last series were made with the telescope in the same position, and consequently upon the same division, yet they differ more than observations usually do, which are made in different positions.

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β *Cephei.*

1812, Oct. 22, 24, 26, 29, 31, Nov. 3, 4, 21, 22, Dec. 5	} 30,574″	Mean of 10	30,574″
Dec. 8, 9, 13. 1813, Mar. 16, 20, Apr. 1, 2, 3, 8, 14	} 30,343	Mean of 20	30,458
Aug. 11, 12, 13, 15, 16 17, 19, 20, 22, 23 − −	} 30,985	Mean of 30	30,634
Aug. 24, 25, 26, 30, 31, Sept. 2. 3, 4, 5, 6 − −	} 30,894	Mean of 40	30,699

This result is probably exact to a quarter of a second.

α *Ursæ Major.*

1812, June 13, 29, July 9, 10, 15, 20, Aug. 14, Oct. 1, 2, 3	} 31,500″	Mean of 10	31,500″
Oct. 4, 6, 14, 15, 18, 19, 20, 23, 27, 28 − −	} 31,596	Mean of 20	31,548
Oct. 30, Nov. 4, 5, 9. 1813, Mar. 23, 26, 29, 31, Apr. 2, 3	} 31,525	Mean of 30	31,540
Apr. 4, 7, 8, 9, 10, 12, 13, 14, 20, 26 − − −	} 31,731	Mean of 40	31,588
May 24, 26, 31, June 1, 7, 8, 9, 11, 16, 25 −	} 31,124	Mean of 50	31,495
June 26, 27, July 6, 10, 18, 20, 25, 30, Aug. 5, 6 −	} 31,279	Mean of 60	31,459

This result seems to be extremely exact, and probably does not differ more than one-tenth of a second from the truth.

α *Cephei.*

1812, Oct. 28, 29, 31, Nov. 3, 21, 22, Dec. 5, 8, 9, 13	} 12,484″	Mean of 10	12,484
1813, Mar. 20, Apr. 1, 3, 8, 12, Aug. 11, 12, 13, 15, 16	} 12,735	Mean of 20	12,610
Aug. 17, 19, 20, 21, 22, 23, 24, 25, 30, 31 − −	} 12,435	Mean of 30	12,551
Sept. 2, 3, 4, 5, 6, 7, 8, 9, 10, 14 − −	} 12,228	Mean of 40	12,470

α *Cassiop.*

1812, June 17, 22, 28, July 6, 7, Oct. 26, 28, 29, 31, Nov. 3 } 22,839	Mean of 10	22,839
Nov. 4, 5, 6, 7, 19, 20, 22, 28, 29, Dec. 6 - - } 22,456	Mean of 20	22,647
Dec. 7, 8, 9, 10. 1813, Jan. 9, 10, 16, 22, 24, Apr. 8 - } 522,59	Mean of 30	22,630
Apr. 9, 11, 17, May 26, 27, 28, 31, June 7, 10, 12 - } 23,041	Mean of 40	22,726

This result may, I think, be relied on, to a quarter of a second.

γ *Ursæ Major.*

1812, June 22, Oct. 27, 28, Nov. 3, 5, 6, 21, 24, Dec. 6. 1813, Mar. 17 - } 55,440	Mean of 10	55,440
Mar. 21, Apr. 1, 3, 4, 7, 8, 9, 10, 11, 12 - - } 54,975	Mean of 20	55,207
Apr. 13, 14, 16, 17, 20, 26, May 22, 26, 28, 29 - } 55,489	Mean of 30	55,301
May 31, June 1, 7, 8, 12, 23, 25, 27, July 5, 6 - } 55,457	Mean of 40	55,340
July 16, 20, 30, Aug. 7, 20, 31, Sept. 12, 14 - - } 54,952	Mean of 48	55,275

This result, like the last, is probably exact to a quarter of a second.

γ *Draconis.*

1812, June 15, 16, 21, 23, 28, 29, July 6, 7, 8, 9 -	} 3,845	Mean of 10	3,845
July 10, 11, 14, 17, 19, 20, 21, 22, 28, 29 - -	} 3,779	Mean of 20	3,812
July 30, 31, Aug. 1, 3, 12, 13, 15, 17, 20, 21 - -	} 3,182	Mean of 30	3,602
Sept. 15, 16, 18, 19, 20, 21, Oct. 1, 3, 5, 8 - -	} 3,604	Mean of 40	3,603
Oct. 9, 15, 21, 24, 26, 28, 29, 31, Nov. 3, 6 - -	} 3,651	Mean of 50	3,612
Nov. 8, 15, 19, 20, 21, 22, 23, Dec. 5, 6, 8 - -	} 3,877	Mean of 60	3,656
Dec. 9, 10, 13, 15. 1813, June 22, 24, 25, 26, 27, 28 -	} 3,471	Mean of 70	3,635
July 5, 6, 9, 10, 11, 12, 13, 16, 17, 18 - -	} 3,980	Mean of 80	3,674
July 19, 20, 22, 23, 24, 25, 26, 27, 28, 29 - -	} 3,477	Mean of 90	3,652

This determination of γ Draconis is extremely exact. Its zenith distance has also been determined, with equal accuracy, by 120 observations made with the zenith sector during the years 1811 and 1812: the mean of above 60 observations of 1811 do not differ more than one-tenth of a second from the mean of an equal number in 1812.

	′ ″
Mean zenith distance beginning of 1813 by observations of 1811 - - -	2 17.8
By observations in 1812 - - -	2 17.9
Mean zen. distance by zenith sector -	2 17.85
N. P. D. by mural circle - - -	38 29 3.65
Sum or Co. latitude - - -	38 31 21.5

η *Ursæ Major.*

1812, June 11, 12, 13, 14, 15, 17, 20, 20, 22, 23, 24	57,671	Mean of 10	57,671
June 28, July 6, 7, 8, 9, 11, 15, 18, 20, 28	58,069	Mean of 20	57,870
Aug. 7, 15, 19, 20, 22, Sept. 16, 18, 20, 21, Oct. 4	58,138	Mean of 30	57,966
Oct. 5, 7, 8, 24, 28, 30, Nov. 5, 6, 7, 14	58,000	Mean of 40	57,969
Nov. 18, 21, 23, Dec. 5, 8, 23. 1813, May 26, 28, 31, June 1	57,348	Mean of 50	57,845
June 4, 7, 10, 11, 12, 16, 21, 22, 23, 25	58,123	Mean of 60	57,891
June 26, 27, July 5, 6, 9, 16, 18, 19, 20, 22	58,057	Mean of 70	57,915
July 24, 27, 28, 29, 30, Aug. 3, 12, 13, 16, 19	57,641	Mean of 80	57,881

This result is probably not inferior in precision to the last.

α *Persei.*

1812, July 7, 9, 17, 20, 21, 28, Aug. 16, 17, Dec. 8, 12	52,970	Mean of 10	52,970
Dec. 13, 14, 28. 1813, Jan. 8, 10, 11, 22, 24, 28, Feb. 5	52,417	Mean of 20	52,693
Feb. 23, March 1, 4, 6, 7, 17, 19, Apr. 11, 12, 13	52,468	Mean of 30	52,618
Apr. 14, 18, May 27, 28, June 1, 19, 20, July 6, 15, 17	52,824	Mean of 40	52,670

Exact to a quarter of a second.

Capella.

1812, June 15, 26, 28, July 7, 8, 9, 10, 14, 20, 23 -	} 20,987	Mean of 10	20,987
July 28, 30, Aug. 13, 16, 17, 19, 21. 1813, Jan. 2, 7, 8	} 21,009	Mean of 20	20,998
Jan. 10, 11, 16, 22, 24, 27, 28, 31, Feb. 23, Mar. 1 -	} 20,719	Mean of 30	20,905
Mar. 2, 3, 5, 6, 7, 12, 17, 18, 22, Apr. 8 - -	} 19,951	Mean of 40	20,667
Apr. 9, 10, 11, 12, 13, 14, 15, 17, 18, 20 - -	} 21,124	Mean of 50	20,758
Apr. 21, May 28, 29, June 1, 2, 20, July 4, 5, 6, 12 -	} 19,537	Mean of 60	20,555
July 15, 16, 17, 22, 23, 25, 28, 29, 30, 31 - -	} 20,258	Mean of 70	20,512
Aug. 3, 5, 6, 8, 9, 10, 11, 13, 15, 17 - -	} 20,061	Mean of 80	20,468

One of the above series differs a second from the mean of the whole, a circumstance very unusual, but quite uncon- nected with error of division, I attribute it to want of sufficient care in reading off the microscopes. The mean result may, nevertheless, be depended upon to a quarter of a second.

α *Cygni.*

1812, Sept. 15, 16, 17, 18, 20, 21, Oct. 2, 3, 4, 5 -	} 56",846	Mean of 10	56",846
Oct. 8, 10, 13, 14, 16, 22, 23, 24, Nov. 7, 8 - -	} 56,568	Mean of 20	56,707
Nov. 15, 19, 20, 21, 22, 23, 24, Dec. 8, 9, 10 - -	} 56,980	Mean of 30	56,798
Dec. 13, 30. 1813, Jan. 8, 9, 10, 16, 22, Feb. 8, 9, 10	} 57,405	Mean of 40	56,925
Feb. 15, 28, March 6, 11, 12, 16, 20, 26, 27, Apr. 1 -	} 57,178	Mean of 50	56,975
July 27, 28, 29, 30, Aug. 3, 4, 5, 7, 9, 10 - -	} 56,665	Mean of 60	56,940
Aug. 11, 12, 13, 15, 17, 19, 20, 21, 22, 23 - -	} 56,887	Mean of 70	56,947

Result very exact.

α *Lyræ.*

1812, July 6, 7, 9, 10, 14, 17, 21, 22, 23, 26 -	} 0",123	Mean of 10	0",123
July 28, 30, 31, Aug. 1, 6, 12, 13, 15, 16, 17 - -	} 0,514	Mean of 20	0,318
Aug. 18, 19, 20, 21, Sept. 15, 16, 18, 19, Oct. 1, 2 -	} 0,364	Mean of 30	0,334
Oct. 3, 4, 5, 8, 9, 10, 12, 15, 16, 19 - -	} 0,299	Mean of 40	0,325
Oct. 21, 24, 26, 28, 29, 31, Nov. 2, 3, 7, 8 -	} 0,983	Mean of 50	0,457
Nov. 13, 15, 19, 20, 21, 22, 23, Dec. 2, 6, 8 - -	} 0,857	Mean of 60	0,522
Dec. 9, 10, 12, 13. 1813, Jan. 2, 7, 9, 15, 21, June 22	} 0,514	Mean of 70	0,521
June 23, 24, 25, 26, 27, 28, July 5, 6, 9, 10 - -	} 0,501	Mean of 80	0,519
July 11, 12, 13, 16, 17, 18, 19, 23, 24, 25 - -	} 0,187	Mean of 90	0,482

Castor.

1812, Aug. 13, 19, 21. 1813, Jan. 16, 24, 28, Mar. 5, 7, 10, 16 - - } 46″,916	Mean of 10	46″,916
Mar. 18, 23, 31, Apr. 3, 8, 11, 13, 15, 28, June 1 - } 46,672	Mean of 20	46,794
Aug. 11, 14, 16, 23, 24, 28, Sept. 2, 6, 7, 10 - } 46,596	Mean of 30	46,728

Pollux.

1812, June 13, 15, 19, Aug. 13, 16, 17, 19, Oct. 1, 3, 4 } 56″,536	Mean of 10	56″,536
Oct. 11. 1813, Jan. 16, 22, 24, Feb. 28, Mar. 5, 10, 13, 18, 23 } 56,332	Mean of 20	56,434
Mar. 31, Apr. 8, 11, 13, 15, May 28, June 1, 25, July 28, 30 } 56,313	Mean of 30	56,394
Aug. 3, 5, 11, 16, 22, 23, 24, 25, 28, Sept. 1 - } 56,380	Mean of 40	56,341

Exact to a quarter of a second.

β *Tauri.*

1812, July 20, 22, 30, Aug. 13, 19, 21, Nov. 19, 28. 1813, Jan. 2, 8 - - } 43″,650	Mean of 10	43″,650
Jan. 10, 11, 13, 24, 25, 27, 28, 31, Mar. 1, 3 - } 43,438	Mean of 20	43,544
Mar. 5, 6, 7, 12, 17, 18, 19, 31, Apr. 9, 10 - - } 43,410	Mean of 30	43,499
Apr. 11, 12, 14, July 15, 16, 17, 25, 28, 29, 30 - - } 43,903	Mean of 40	43,600
July 31, Aug. 6, 8, 9, 11, 15, 18, 20, 22, 23 - } 43,820	Mean of 50	43,663

Exact to less than a quarter of a second.

α *Cor. Bor.*

1812, June 11, 12, 13, 14, 15, 19, 21, 22, 23, 28 -	55,441"	Mean of 10	55,441"
June 30, July 4, 6, 8, 9, 15, 18, 19, 20, 21 - -	55,295	Mean of 20	55,368
July 22, 26, 28, Aug. 13, 15, 17, 18, 19, Sept. 15, 16	55,316	Mean of 30	55,351
Sept. 19, 20, 21, Oct. 3, 4, 5, 6, 8, 13, 20 - -	56,041	Mean of 40	55,523
Oct. 26, 28, 29, 31, Nov. 20, 21, 22, Dec. 7, 12, 14 -	55,791	Mean of 50	55,577
1813, Jan. 8, 9, 11, May 29, June 7, 8, 10, 12, 16, 18	54,833	Mean of 60	55,453
June 21, 22, 24, 25, 27, 29, July 5, 6, 10, 12 -	55,008	Mean of 70	55,389
July 16, 17, 18, 19, 20, 23, 24, 26, 27, 28 - -	55,487	Mean of 80	55,401

Exact to less than a quarter of a second.

α *Arietis.*

1812, June 18, 19, 22, 23, 26, 28, July 6, 7, 9, 10 -	37,380"	Mean of 10	37,380"
July 14, 17, 20, 21, 22, Aug. 17, Oct. 24, 25, 26, 28 -	36,263	Mean of 20	36,822
Oct. 29, 31, Nov. 3, 5, 6, 7, 8, 9, 15, 19 - -	35,811	Mean of 30	36,485
Nov. 21, 22, 24, 28, 29, Dec. 6, 7, 8, 13. 1813, Jan. 8	36,532	Mean of 40	36,497
Jan. 9, 16, May 22, June 19, 20, July 4, 5, 6, 11, 16	36,474	Mean of 50	36,492

I mentioned this star as doubtful in my former Catalogue. I believe the discordances were quite accidental, and that the mean result is within a quarter of a second of the truth.

Arcturus.

1812, June 11, 12, 13, 15, 16, 19, 20, 21, 28, 29 - }	18,729	Mean of 10	18,729
July 4, 6, 7, 8, 9, 11, 15, 18, 20, 26 - - }	19,867	Mean of 20	19,298
July 18, 31, Aug. 7, 14, 18, 19, Sept. 20, 21, Oct. 2, 4 - }	19,341	Mean of 30	19,312
Oct. 7, 9, 13, 16, 18, 24, 25, 26, Nov. 3, 5 - - }	19,225	Mean of 40	19,291
Nov. 6, 7, 14, 18, 21, 22, 23, Dec. 6, 7, 8 - - }	19,453	Mean of 50	19,323
Dec. 12, 14, 23. 1813, May 24, 26, 27, 28, 31, June 1, 4 }	18,761	Mean of 60	19,230
June 7, 8, 10, 11, 12, 16, 21, 22, 25, 26 - - }	18,585	Mean of 70	19,137
June 27, July 5, 6, 7, 9, 12, 16, 18, 19, 23 - - }	18,653	Mean of 80	19,077

Exact to a quarter of a second, or less.

Aldebaran.

1812, June 23, 28, July 5, 7, 8, 9, 10, 25, 26, 28 - }	35,614	Mean of 10	35,614
Aug. 14, 16, 17, 19, 21, Sept. 5, Dec. 25, 28. 1813, Jan. 8, 10 }	35,135	Mean of 20	35,374
Jan. 11, 16, 22, 24, 28, 31, Feb. 23, Mar. 1, 6, 7 - }	35,475	Mean of 30	35,407
Mar. 11, 17, 18, 19, 31, Apr. 4, 8, 9, 10, 11 - - }	35,390	Mean of 40	35,402
Apr. 12, 14, 15, June 28, July 6, 8, 10, 15, 16, 17 - }	35,347	Mean of 50	35,392
July 23, 25, 27, 28, 29, 30	35,142	Mean of 56	35,365

Result very exact.

β *Leonis.*

1812, June 13, 14, 15, 22, 29, July 6, 8, 9, 11, 12　-	} 57,544″	Mean of 10	57,544″
July 15, 23, Oct. 2, 3, 4, 6, 7, 14, 15, 22　-　-	} 57,077	Mean of 20	57,310

This star has not been often observed, owing to its proximity in right ascension to γ Urs. Maj.; but the result is probably exact to within 0″,3, as it very seldom happens that the mean of twenty observations differs a quarter of a second from the truth

α *Herculis.*

1812, July 11, 14, 30, Aug. 3, 7, 15, 17, 18, 20, Sept. 19	} 13,835″	Mean of 10	1,3835″
Sept. 20, 21, Oct. 3, 4, 8, 9, 29, 31, Nov. 15, 21　-	} 14,170	Mean of 20	14,002
Nov. 22, 23, Dec. 12.　1813, Jan. 9, 11, 15, July 11, 25, 27, 28　-　-	} 13,803	Mean of 30	13,936
July 29, 30, Aug. 2, 4, 7, 9, 10, 12, 13, 15　-　-	} 14,223	Mean of 40	14,008
Aug. 17, 18, 19, 23, 24, 30, 31, Sept. 5, 6, 13　-	} 14,169	Mean of 50	14,040

Result very exact.

α *Pegasi.*

1812, Oct. 1, 2, 3, 4, 5, 8, 10, 11, 12, 16　-　-	} 51,330″	Mean of 10	51,330″
Oct. 17, 21, 28, Nov. 3, 7, 9, 19, Dec. 5, 7, 12　-	} 52,060	Mean of 20	51,695

This star is reserved for future examination.

Regulus.

1812, June 12, 13, 15, 19, 20, 22, 23, July 6, 7, 8 -	} 23,331	Mean of 10	23,331
July 9, 14, 15, 18, 21, 23, 28, Oct. 1, 2, 3 - -	} 23,205	Mean of 20	23,268
Oct. 4, 6, 12, 14, 15, 19, 20, 23, 27, 28 - -	} 22,543	Mean of 30	23,026
Nov. 5. 1813, Mar. 7, 10, 12, 13, 17, 18, 22, 23, 26 -	} 22,236	Mean of 40	22,829
Mar. 29, 31, Apr. 1, 2, 3, 4, 7, 8, 9, 11 - -	} 22,148	Mean of 50	22,692
Apr. 12, 13, 14, 20, 26, May 24, 28, 31, June 2, 7 -	} 22,665	Mean of 60	22,688
June 8, 11. July 6, 7, 9 -	22,576	Mean of 65	22,679

Not to be relied on with the same confidence as some others, as one of the above series differs a second from the mean; the result may be erroneous a quarter of a second, but, I think, not much more.

α *Ophiuchi.*

1812, June 28, 29, July 11, 14, 21, 22, 26, 28, 30, Aug. 3	} 39,126″	Mean of 10	39,126″
Aug. 19, 20, Sept. 15, 16, 19, 20, 21, Oct. 3, 8, 9 -	} 39,949	Mean of 20	39,537
Oct. 28, 31, Nov. 7, 15, 19, 21, 22, 23, Dec. 6, 8 -	} 40,358	Mean of 30	39,811
Dec. 29. 1813, Jan. 7, 9, 15, June 24, 25, 26, 27, July 5, 6	} 39,215	Mean of 40	39,662
July 9, 10, 11, 12, 13, 16, 17, 18, 19, 22 - -	} 38,849	Mean of 50	39,500
July 23, 24, 25, 26, 27, 28, 29, Aug. 2, 4, 5 - -	} 38,523	Mean of 60	39,339
Aug. 7, 9, 10, 12, 13, 15, 17, 19, 20, 24 - -	} 38,115	Mean of 70	39,163

Some discordances in the above observations, which I cannot explain, render the result doubtful, and I reserve this star for future examination.

α *Aquilæ.*

1812, July 26, 30, Aug. 1, 3, 6, 9, 12, 14, 18, 19 -	} 58,133	Mean of 10	58,133
Sept. 15, 16, 18, 19, 20, 21, Oct. 2, 3, 4, 7 - -	} 59,381	Mean of 20	58,757
Oct. 8, 10, 13, 15, 16, 19, 21, 23, 24, 27 - -	} 58,963	Mean of 30	58,826
Oct. 28, 29, Nov. 2, 3, 6, 7, 15, 19, 21, 22 - -	} 59,705	Mean of 40	59,045
Nov. 23, 24, Dec. 8, 9, 10. 1813, Jan. 21, Feb. 28, Mar. 5, 6, 7 - -	} 59,626	Mean of 50	59,162
Mar. 12, 20, 26, 27, Apr. 1, 3, July 11, 12, 16, 17 -	} 58,014	Mean of 60	58,970
July 19, 21, 22, 25, 26, 27, 28, 29, 30, Aug. 1 -	} 58,280	Mean of 70	58,872
Aug. 2, 3, 4, 7, 10, 11, 12, 13, 15, 16 - -	} 58,280	Mean of 80	58,799

Procyon.

1812, June 12, 19, July 25, Sept. 15, 16, 17, 18, 19, 20. 1813, Feb. 24 - -	} 13,999	Mean of 10	13,999
Mar. 3, 6, 8, 17, 22, 29, Apr. 2, 4, 9, 10 - -	} 14,221	Mean of 20	14,110
Apr. 12, 14, 20, June 2, 7, 8, July 29, Aug. 11, 14, 16	} 14,795	Mean of 30	14,338
Aug. 17, 23, 24, Sept. 2, 6, 7, 10, 12, 13, 14 -	} 14,426	Mean of 40	14,360

Probably exact to a quarter of a second.

Polaris.

Mean Day of the Month.	Position of the Telescope on the Instrument.	Number of Observations above the Pole.	Number of Observations below the Pole.	Total Number of Observations.	N. P. D. Jan. 1, 1813.		
1812.					° ′ ″		″
June 15	0	3	8	11	1 41 21,79	Mean of 11	21,79
29	30	4	3	7	22,06	Mean of 18	21,89
July 7	10	4	4	8	22,49	Mean of 26	22,08
18	20	6	5	11	22,29	Mean of 37	22,14
Oct. 18	0	10	9	19	21,69	Mean of 56	21,99
Nov. 10	10	10	6	16	21,71	Mean of 72	21,95
Dec. 8	20	10	7	17	21,32	Mean of 89	21,83
1813.							
Apr. 1	30	19	17	36	21,44	Mean of 125	21,72
June 10	0	19	23	42	21,70	Mean of 167	21,72

The mean of more than 200 observations of this star is 1° 41′ 21″,75. The above 167 were selected in preference; the result, however, is the same.

Notwithstanding the great number of observations of this star, there are discordances which render the result doubtful to 0″,25. If the observations with four microscopes, previous to Oct. 1812, be rejected, the mean result with six microscopes will be 1° 41′ 21″,6, which I prefer to the above.

The following Table shews the State of the Standard Catalogue
at this present Time, Sept. 1813.*

N. P. D. of Stars for the beginning of the Year 1813.

	Names of Stars.	No. of Obs.	N. P. D. Jan. 1813.	Difference of former Catalogue.	
			° ′ ″		
1	Polaris	200	1 41 21,75	+ 0,02	
2	β Urs. min.	90	15 4 48,95	0,00	
3	β Cephei	40	20 5 30,70	+ 0,40	
4	α Urs. maj.	60	27 14 31,46	— 0,04	
5	α Cephei	40	28 12 12,47	+ 0,12	
6	α Cassiop.	40	34 29 22,73	— 0,10	
7	γ Urs. maj.	50	35 15 55,27	+ 0,17	
8	γ Draconis	90	38 29 3,65	— 0,08	
9	η Urs. maj.	80	39 44 57,88	+ 0,08	
10	α Persei	40	40 48 52,67	+ 0,30	
11	Capella	80	44 12 20,47	— 0 49	
12	α Cygni	800	45 22 56,92	= 0,27	
13	α Lyræ	100	51 23 0,43	— 0,29	
14	Castor	30	57 42 46,73	+ 0,16	
15	Pollux	40	61 31 56,34	— 0,23	
16	β Tauri	50	61 34 43,66	+ 0,15	
17	α Androm.	35	61 56 29,61		The same as in former Catalogue,
18	α Cor. Bor.	90	62 38 55,43	— 0,27	and probably true to 0″,5 or less.
19	α Arietis	50	67 25 36,49	— 0,27	
20	Arcturus	80	69 50 19,08	+ 0,04	
21	Aldebaran	56	73 52 35,36	+ 0,18	
22	β Leonis	20	74 22 57,31	+ 0,07	
23	α Herculis	50	75 23 14,04	+ 0,07	
24	α Pegasi	20	75 47 51,70	+ 0,07	
25	Regulus	50	77 7 22,69	— 0,25	
26	α Ophiuchi	70	77 17 39,16	— 0,50	Doubtful to 0″,5.
27	α Aquilæ	100	81 36 58,66	— 0,22	Doubtful.
28	α Orionis	30	82 38 15,72	— 0,24	Doubtful to 0″,5.
29	α Serpentis	70	82 58 39,26	+ 0,39	
30‡	Procyon	40	84 18 14,36	— 0,36	

‡ The N. P. D. of Procyon in the former Catalogue was 15″,03; this was from a mistake of 1″,0 committed in adding the annual variation, it should have been 14″,03.

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* Though the Observations were given to the Society, as by the date of the paper, yet, by the permission of the President and Council, they were extended till the time that they went to the press.

Remarks on the above Observations.

α Lyræ and *α* Aquilæ having been supposed subject to a
sensible parallax, I have, as I mentioned before, reserved them
for future examination. The observations which I have already
made on these stars, and particularly on *α* Aquilæ, are not
incompatible with this supposition, though I cannot at present
venture to decide whether the small discordances I have met
with are to be attributed to any regular cause, or are only
accidental.

Whenever I speak of the degree of exactness to which any
result may be depended upon, I allude only to the mechanical
measure given by the instrument. I have every reason to
believe, that if two fixed and well defined points could be
placed in the plane of the meridian, I could, in a very short
time, measure their angular distance to within a tenth of a
second; but astronomers must be well aware that the stars
are not presented to us in this simple form, and that the sources
from which small errors may arise, either in the observations
themselves or subsequent computation, are so very numerous,
that anomalies will occur even to the most careful observer,
which he will in vain endeavour to explain. With respect to
the parallax of *α* Lyræ, I might observe that it is a star so
badly defined, and so little adapted for exact observation, that
a parallax of half a second would not be easy to determine
even with the Greenwich circle.

α Aquilæ is in some respects a better star for observation,
but only half its actual parallax would be sensible in decli-
nation.

There are several other stars much better adapted for this investigation, even should their distance be supposed more than double, such are Polaris, η Ursæ maj. α Cygni, β Urs. min. and γ Draconis; now in these I have not hitherto found any sensible parallax; occasional discordance has frequently suggested some slight hopes, but these have always been disappointed by continuing the observations. It is, however, useless now to anticipate this subject farther.

Those stars which are in the general Catalogue, but which do not form part of the standard Catalogue, I presume to be exact to the nearest second.

I have not included any star in the standard Catalogue south of the equator, on account of the uncertainty of refraction.